

ABSTRACT

A lookup engine for a network device is provided to lookup an address table. The lookup engine includes a parser for getting address information of an incoming packet. A predetermined number of shift control logic is provided for generating an I.I.D hash index for the incoming packet in response to the address information of the incoming packet. The output of each shift control logic is selected by a selector for looking up an address table, thereby to generate a forwarding information. With the implementation of the shift control logic, the lookup engine can construct each flow entry and classify the incoming packets belonging to this flow in wire-speed.